

Owner's Manual

HDS-21R / 41R

The World's Best 2x1 / 4x1 HDMI/HDTV Switch

Unpacking

Each HDS-21R HDMI Switch package includes the following items;

Dtrovision HDS-21R HDMI Switch Unit x1

5V Power Supply Adapter x1

Remote Control Unit x1

User manual x1

Description

Dtrovision's HDS-21R HDMI Switch allows number of digital video sources(with audio) to share one video display(with audio).

Our unique switch allows easy switching between different digital video sources(with audio) with remote control unit and/or with a manual toggle button in front and/or via RS232 port.

Perfect for home theater systems. No more hassles of manually plugging in different HDMI connectors to view different video sources (e.g., DVD, Satellite receiver, computer, TiVo).

ITEM	DESCRIPTION
Model Name	HDS-21R
Input Signal	HDMI Single Link , 2 Port
Output Signal	HDMI (TMDS)Single Link
Resolution	VGA / SVGA / XGA / UXGA 480i, 480p , 720i, 720p , 1080i, 1080p
Receptacle	DC Power Jack x 1 HDMI output x 1 HDMI input x 2
HDCP Support	HDCP Compliant
Power Consumption	DC +5V , 2W Max
Dimension	230x105x30 mm

Environmental and Reliability Specifications

1. Operating Conditions

Temperature : 10°C ~ 40°C

Humidity : 10% ~ 80%, non-condensing

2. Transportation Conditions

Temperature : -25°C ~ 60°C

Humidity : 5% ~ 95%, non-condensing

Altitude : maximum 15,000m

3. Storage Conditions

Temperature : -20°C ~ 45°C

Humidity : 5% ~ 95%, non-condensing

Altitude : maximum 3,000m

4. Reliability Specifications

MTBF : more than 50,000 hours at 90% confidence level

Main Features

High Quality Picture - No Signal Loss and Digital Noise Free

HDS-21R is built to deliver the highest quality picture preserving the native resolutions of the video sources(with audio) without any signal loss. At the same time, the digital noises that may affect the picture quality will be eliminated. Due to the nature of the digital signals and passing through multiple stages of connection when using switchers, it is important to eliminate the digital noises and boost the signal strength to preserve/enhance the video & audio signal quality.

Compact and Practical Design

HDS-21R has all of the HDMI ports, power supply jack and RS232 port in the back of the unit allowing it be mounted on any racks or with any other components. In the front, there will be a remote control sensor, selector switch, RS232 LED indicators and channel indicators.

Remote Control Unit with Discreet Channel selections

Remote Control Units with discreet channel selection feature is included in all our switches. The channel buttons on the remote control unit will allow you to change video sources easily and quickly.

RS232 Control

Our switches also feature RS232 Control. Our switches are capable of being controlled by a remote computer. This is extremely helpful for many applications where you need to automatically switch the video inputs. Example: If you connect a PC to our switcher, you can program it to automatically switch the sources. If you want to display input 1 for 1 hour and then switch to input 2, you can do this with the PC. The RS232 LED indicators in the front will allow you to check the communication between the PC and the switch. Most other products require additional control box for this function.

HDMI Connection Instruction

1. Connect your video source's HDMI output port to the HDMI switch's HDMI input port using standard HDMI cables(not included). Make sure all your HDMI sources and the display is turned off before connecting the cables)
2. Connect your HDMI display's HDMI input port to HDMI switch's HDMI output port. Make sure your HDMI display is turned off before connecting the cables)
3. Plug the 5V power supply into the switch's power input port.
4. Plug the 5V wall mount power supply into the wall outlet.
5. Turn on your display.
6. Turn on your video sources.
7. Use your remote control unit to switch channels. Or use the select button on the front panel of the switch to change channels.

RS232 CONTROL CONNECTION

RS232 connection allows the user to interface the HDMI LINK switch with a serial port on a computer or other control device. The computer or other control device may require additional software for various control functions. (Control software not included)

*** Please refer to RS232 connection diagram before installation.**

Baud Rate: 9600bps

Pin Assignments;

Control computer's RS232 pin# 2 is connected to our DVI switch's pin#3

Control computer's RS232 pin# 3 is connected to our DVI switch's pin#2

Control Protocol;

Channel 1 request is ascii code "@001*" and the response back to the computer is "!"

Channel 2 request is ascii code "@002*" and the response back to the computer is "!"

Channel 3 request is ascii code "@003*" and the response back to the computer is "!"

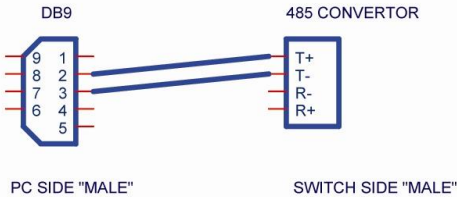
Channel 4 request is ascii code "@004*" and the response back to the computer is "!"

RS232 Connection Diagram

PC TO 2:1, 4:1 SWITCH CONNECTION

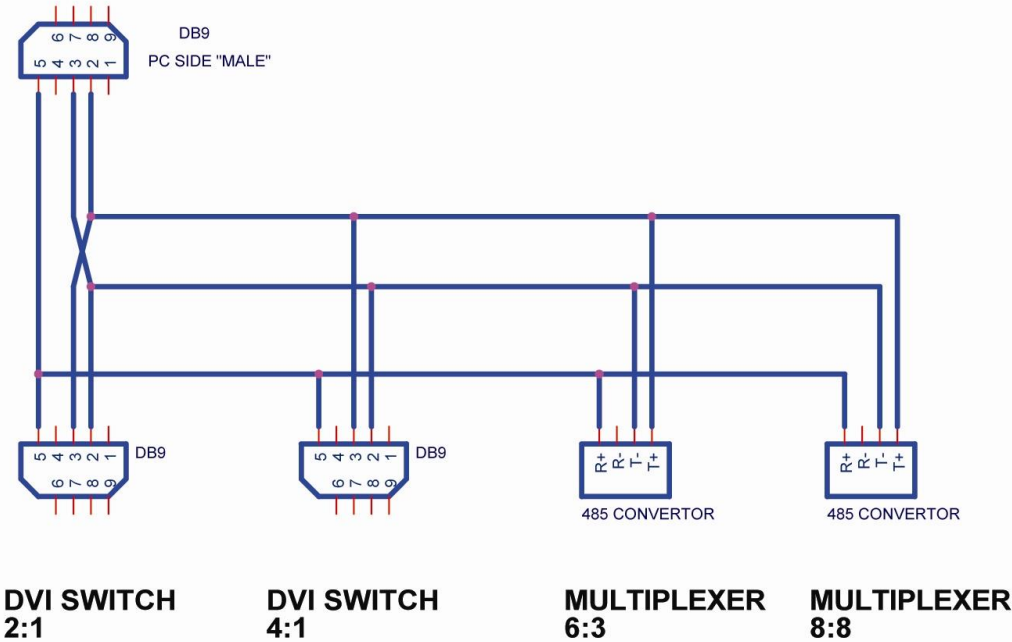


PC TO 6:3, 8:8 MULTIPLEXER CONNECTION



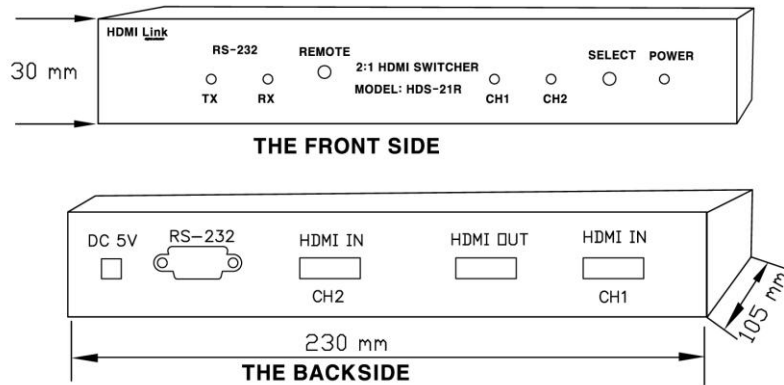
PC TO 2:1, 4:1 SWITCH & 6:3 , 8:8 MULTIPLEXER COMPLEX CONNECTION

**MAIN
COMPUTER**



Mechanical Specification

Dimensions(LxWxH): 9 x 4.1 x 1.2 inches



DC 5V : DC Power 5V Input

RS-232 : Com Port For Switch Function Control

HDMI IN CH1 & 2 : HDMI Inputs

HDMI OUT : HDMI Output

LED CH1~2 : Selected Channel Indication

REMOTE : IR Sensor

SELECT : Manual Channel Toggle Button

Technical Specification

Frequency bandwidth: 1.65 Gbps (Single Link)

Supporting Graphic Resolution: Computers up to UXGA (1600 X 1200 at up to 75Hz)

AV equipments up to 1080p (1920 X 1080 at up to 60Hz)

Inputs: HDMI Female port(x2)

Output: HDMI Female port(x1)

Power supply: DC 5V, 1.2A Adapter included.

Infrared Remote Control Included

HDCP (High-bandwidth Digital Content Protection) Compliant: Both the video source and the video display must be HDCP compliant

Connector Pin Assignments

HDMI port	Pin No.	Description	Remarks
HDMI 19pin	1	TMDS DATA 2P	
	2	TMDS DATA 2 Shield	
	3	TMDS DATA 2M	
	4	TMDS DATA 1P	
	5	TMDS DATA 1 Shield	
	6	TMDS DATA 1M	
	7	TMDS DATA 0P	
	8	TMDS DATA 0 Shield	
	9	TMDS DATA 0M	
	10	TMDS Clock P	
	11	TMDS Clock Shield	
	12	TMDS Clock M	
	13	CEC	
	14	RESERVED	
	15	DDC Clock	
	16	DDC DATA	
	17	GND	
	18	+5v	
	19	Hot Plug Detect	

Warranty Information

1 (One) Year Warranty

Dtrovision warrants that this HDS-21R 2x1 HDMI Switch to be free from defects in workmanship and materials, under normal use and service, for a period of one (1) year from the date of purchase from Dtrovision or its authorized resellers.

If a product does not work as warranted during the applicable warranty period, Dtrovision shall, at its option and expense, repair the defective product or part, deliver to customer an equivalent product or part to replace the defective item, or refund to customer the purchase price paid for the defective product. Dtrovision shall not be responsible for applicable freights.

All products that are replaced will become the property of Dtrovision.

Replacement products may be new or reconditioned.

Any replaced or repaired product or part has a ninety (90) day warranty or the remainder of the initial warranty period, whichever is longer.

Dtrovision. shall not be responsible for any software, firmware, information, or memory data of customer contained in, stored on, or integrated with any products returned to Dtrovision for repair under warranty or not.

Warranty Limitation and Exclusion

Dtrovision. shall have no further obligation under the foregoing limited warranty if the product has been damaged due to abuse, misuse, neglect, accident, unusual physical or electrical stress, unauthorized modifications, tampering, alterations, or service other than by Dtrovision or its authorized agents, causes other than from ordinary use or failure to properly use the Product in the application for which said Product is intended.

Troubleshooting

Problem	Solution
Switch will not operate	<p>Make sure the 5V power is plugged in the back of the unit.</p> <p>Check to see if the power LED light is on.</p>
No picture(or signal) or Poor picture	<p>1.In case your video source is HDCP enabled, make sure your video display(HDTV) is HDCP compliant.</p> <p>2.If you are using copper based HDMI cable, overall length of the cables(length of the cables from video source to switch and length of the cable from switch to display)should not exceed 20ft. Exceeding 20ft. with copper based cables will result in no or poor picture quality. To extend beyond 20ft, please use fiber optical HDMI extension cables such as Dtrovision Model OC cables.</p> <p>3.Use high quality HDMI cables.</p> <p>4.If you are using computers, try other refresh rate settings. Most HDTVs have refresh rate of 48Hz and computer's video cards are usually set at higher refresh rate. Try lower refresh rates.</p> <p>5.Makes sure all HDMI connectors are tightly secured to all HDMI ports.</p> <p>6.Turn off all equipments(video source, switch and HDTV) and restart all equipments.</p>
Remote control unit will not operate	<p>Make sure the included batteries are correctly installed.</p> <p>Make sure the 5V power is plugged in the back of the unit.</p> <p>Check to see if the power LED light is on.</p> <p>Try rebooting the switch by unplugging and re-plugging in the AC plug of the 5V power adapter.</p>
Programming Universal Remote Control	<p>Our remote control units use unique codes. To program your own universal remote control, make sure to use "Learn" feature of your universal remote control unit's user manual.</p>

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